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EXAMINER	
LEE, SIU M	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/791,527	SAEY, DIMITRI	
	Examiner	Art Unit	
	SIU M. LEE	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/24/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-11,14-16,19.23,26 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-11,14-16,19.23,26 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/20/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 8-11, 14-16, 19, and 27 are withdrawn. Rejections follow.

Response to Arguments

2. Applicant's arguments with respect to claims 1-4, 7, 20-23, 26 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 7-11, 14-16, 19-23, 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Peeters et al. (Peeters) (US 2001/0012783 A1).

(1) Regarding claim 1:

Peeters et al. discloses a modem comprising:

a carriergroup transmitting means (BiGi_TX of RX modem in figure 1) configured to be coupled to a transmission channel (Line (twisted pair) in figure 1);

a carriergroup receiving means (BiGi_RX of TX modem in figure 1) configured to be coupled to the transmission channel (Line (twisted pair) in figure 1) for receiving parameters relating to a plurality of carriers in the transmission channel (the constellation information receiver BiGi_RX decapsulates the constellation information message paragraph 0019);

a carriergrouping means (CHANNEL and BiGi_PROD of Rx modem in figure 1), configured to be coupled to the carriergroup transmitting means and to the carriergroup receiving means (CHANNEL and BiGi_PROD is coupled to the BiGi_TX and BiGi_RX as shown in figure 1), for determining at least one carriergroup parameter (constellation information message that contains the bit loading information and the gain information, paragraph 0019, lines 13-16) and at least one dynamically variable size carrier group for the plurality of carriers in the transmission channel based on the parameters received by the carriergroup receiving means (channel analyzing circuitry CHANNEL receives a predetermined sequence from the TX modem and measures the signal to noise ratio for each carrier, paragraph 0019, lines 4-7; paragraph 0021 states that the carrier subsets of carriers typically will not contain the same number of carriers and the constitution of the subsets will be report via messages (possibly via the constellation information message BiGi) from the VDSL receiver to the VDSL transmitter; this paragraph indicates that the number of carriers in a carrier subset is not fixed and will varies according to the measured signal to noise ratio by CHANNEL as mentioned in paragraph 0019; paragraph 0023 states "the transmitting and computing bits and gains information according to the present invention may be applied during operation to adapt

the carrier constellation according to changes of the channel characteristics"; the carrier constellation as mentioned in paragraph 0005, "this message also may contain the description of the carrier subsets". This indicates that the generation of the constellation information (including the description of the carrier subsets, the number of bits to be load in each carrier subset and the gain for each of the carrier subset) can be preformed during the operation to adapt to the changes of the channel characteristics, that will include the measure of the signal to noise ratio for each carrier in order to group the carriers into difference carrier subsets. Since it is well known that the channel characteristic is dynamically changing, therefore, the update of the constellation information will be perform according to the change of the channel characteristic, that is the dynamically updating of the constellation information. From this two paragraphs (paragraph 0021 and 0023), it is inherent that he grouping of the carriers and transmitting parameters to other modems are perform dynamically and the size of each carrier subset will varies depending on the signal to noise ratio of each carrier);

a tone decoder (DMOD of Rx modem in figure 1) configured to be coupled to the transmission channel (DMOD of Rx modem in figure 1 is coupled to Line (twisted pair) as shown in figure 1, DMT demodulator DMOD is coupled between a terminal of the VDSL receiver RX coupled to the telephone line, paragraph 0018);

wherein the plurality of carriergroup parameters comprises a carriergroup gain parameter and is used to dynamically set up the tone decoder (in the VDSL receiver RX, the DMT demodulator DMOD demodulates the correct amount of bits from the carriers F_0-F_{4095} since the demodulator DMOD is made aware of the bits and gains

information directly by the constellation information transmitting arrangement BiGi_TX, this information is supplied to the control terminal of the DMT demodulator DMOD, paragraph 0019, it is discuss in above that the constellation information is adaptive to the change of the channel characteristic (paragraph 0023), therefore, the DMOD is being dynamically setup by the constellation information; it is mentioned above the constellation information comprises the number of bits in each carrier subset and the gain for each carrier subset);

wherein the carriergroup transmitting means transmits at least one message to the transmission channel comprising the at least one carrier group parameter and the at least one carrier group (the constellation information message is transmitted over the phone line LINE from the constellation information transmitter BiGi_TX to the constellation information receiver BiGi_RX, paragraph 0019, lines 17-20, it is discuss in above that the constellation information comprises including the description of the number of bits to be load in each carrier subset, the gain for each of the carrier subset, and the carrier subsets (the subsets of carriers typically will not contain the same number of carriers and the constitution of the subsets will be reported via message from the VDSL receiver to the VDSL transmitter, paragraph 0021).

(2) Regarding claim 8:

Peeters et al. discloses a method for grouping a plurality of carriers in a DMT communication system, the method comprising the steps of:

determining at least one dynamically variable sized carrier group for the plurality of carriers (after channel analysis, the carriers are grouped in subset of carriers,

paragraph 0021, lines 3-6) (paragraph 0021 states that the carrier subsets of carriers typically will not contain the same number of carriers and the constitution of the subsets will be report via messages (possibly via the constellation information message BiGi) from the VDSL receiver to the VDSL transmitter, it indicates that the number of carriers in a carrier subset is not fixed and will varies according to the measured signal to noise ratio as mentioned in paragraph 0019. Paragraph 0023 states "the transmitting and computing bits and gains information according to the present invention may be applied during operation to adapt the carrier constellation according to changes of the channel characteristics. The carrier constellation as mentioned in paragraph 0005, "this message also may contain the description of the carrier subsets", it indicates that the generation of the constellation (information including the description of the carrier subsets, the number of bits to be load in each carrier subset and the gain for each of the carrier subset) can be preformed during the operation to adapt to the changes of the channel characteristics, that will include the measure of the signal to noise ratio for each carrier in order to group the carriers into difference carrier subsets. It is well known in the art that a channel characteristic is always changing, the update of the constellation information will be perform according to the change of the channel characteristic, that is the dynamically updating of the constellation information. From paragraph 0021 and 0023, it is inherent that the grouping of the carriers and transmitting parameters to other modems are perform dynamically and the size of each carrier subset will varies depending on the signal to noise ratio of each carrier);

determining at least one carriergroup parameter for the at least one carrier group (the CHANNEL and BiGi_PROD determine the carriergroup information that includes at least the number of bit for each carrier subset and the gain for each carrier subset, paragraph 0019); and

using the plurality of carriergroup parameter to dynamically set up a tone decoder (DMOD of modem receiver RX in figure 1), wherein the plurality of carriergroup parameters comprises a carriergroup gain parameter (in the VDSL receiver RX, the DMT demodulator DMOD demodulates the correct amount of bits from the carriers F_0-F_{4095} since the demodulator DMOD is made aware of the bits and gains information directly by the constellation information transmitting arrangement BiGi_TX, this information is supplied to the control terminal of the DMT demodulator DMOD, paragraph 0019, it is discuss in above that the carriergroup information is adaptive to the change of the channel characteristic (paragraph 0023), therefor, the DMOD is being dynamically setup by the carriergroup information; it is mentioned above the constellation information comprises the number of bits in each carrier subset and the gain fro each carrier subset);

sending at least one message comprising the at least one carriergroup parameter (the so obtained 8 bits values B1 to B8 and 8 gain values G1 to G8 are encapsulated in the constellation information message BiGi by the constellation information transmitter BiGi_TX in the modem receiver RX, the constellation information message BiGi is transmitted over the telephone line LINE from the constellation

information transmitter BiGi_TX t the constellation information receiver BiGi_RX, paragraph 0019).

(3) Regarding claim 15:

Peeters et al. discloses a method for grouping a plurality of carriers in a DMT communication system, the DMT communication system comprising a near end (TX modem in figure 1) and a far end modem (RX modem in figure 1), the method comprising the steps of:

determining at least one dynamically variable sized carriergroup (carrier subset) from the plurality of carriers used for communication in the DMT communication system (channel analyzing circuitry CHANNEL receives a predetermined sequence from the TX modem and measures the signal to noise ratio for each carrier, paragraph 0019, lines 4-7; paragraph 0021 states that the carrier subsets of carriers typically will not contain the same number of carriers and the constitution of the subsets will be report via messages (possibly via the constellation information message BiGi) from the VDSL receiver to the VDSL transmitter; this paragraph indicates that the number of carriers in a carrier subset is not fixed and will varies according to the measured signal to noise ratio by CHANNEL as mentioned in paragraph 0019; paragraph 0023 states "the transmitting and computing bits and gains information according to the present invention may be applied during operation to adapt the carrier constellation according to changes of the channel characteristics"; the carrier constellation as mentioned in paragraph 0005, "this message also may contain the description of the carrier subsets". This indicates that the generation of the constellation information (including the description of the carrier

subsets, the number of bits to be load in each carrier subset and the gain for each of the carrier subset) can be preformed during the operation to adapt to the changes of the channel characteristics, that will include the measure of the signal to noise ratio for each carrier in order to group the carriers into difference carrier subsets. Since it is well known that the channel characteristic is dynamically changing, therefore, the update of the constellation information will be perform according to the change of the channel characteristic, that is the dynamically updating of the constellation information. From this two paragraphs (paragraph 0021 and 0023), it is inherent that he grouping of the carriers and transmitting parameters to other modems are perform dynamically and the size of each carrier subset will varies depending on the signal to noise ratio of each carrier);

determining a carriergroup signal-to-noise ratio for the at least one carriergroup (the channel analyzing circuitry CHANNEL upon transmission of a predetermined sequence measures the signal-to-noise ratio (SNR) for each carrier f_0 to f_{4095}, paragraph 0019, lines 4-13);

determining a carriergroup bitloading and a carriergroup gain for the at least one carriergroup based on the carriergroup signal-to-noise ratio (this signal-to-noise ratio values are used by the constellation information producer to determine for each carrier subset, SUBSET1 to SUBSET8 the number of bits that can be modulated on each carrier of this subset and the gain where each carrier of this subset should be transmitted with, paragraph 0019, lines 8-13); and

using the carriergroup bitloading and the carriergroup gain for the at least one carriergroup for setting up a tone decoder (MOD in figure 1) in the near end modem (the constellation information receiver BiGi_RX decapsulates the constellation information message and supplies the parameter values B1, G1, B2, G2, . . . , B8, G8 to the constellation determining circuitry BiGi_DET; for each subset, SUBSET1, SUBSET2, . . . , SUBSET8, the constellation determining circuitry BiGi_DET obtain for each carrier the number of bits that should be modulated thereon. Similarly, the constellation determining circuitry BiGi_DET constantly interpolates for each subset, SUBSET1, SUBSET2, ...SUBSET8, the received gain value, G1, G2,....,G8 respectively, to obtain for each carrier the gain with which the carrier should be transmitted. The so generated bits and gains information is supplied to the control input of the DMT modulator MOD, paragraph 0019);

using the carriergroup bitloading and the carriergroup gain for the at least one carriergroup for transmitting messages from the near end modem to the far end modem (the MOD is being setup for modulates B1 bits (B1 is supposed to be 2 in Fig.) on the carriers f.sub.0 . . . f.sub.511 of SUBSET1 and transmits these carriers with gain G1, modulates B2 bits (B2 is supposed to be 4 in Fig.) on the carriers f.sub.512 . . . f.sub.1023 of SUBSET2 and transmits these carriers with gain G2, . . . , modulates B8 bits (B8 is supposed to be 3 in Fig.) on the carriers f.sub.3584 . . . f.sub.4095 of SUBSET8 and transmits these carriers with gain G8 as shown in figure 1, paragraph 0019).

(4) Regarding claim 20:

Peeters et al. discloses a modem for grouping a plurality of carriers in a DMT communication system coupled to a far-end modem via a transmission channel (figure 1, the Rx modem and the TX modem), the modem comprising:

carriergrouping means (channel analyzing circuitry (CHANNEL) and the BiGi_PROD in the RX modem in figure 1, paragraph 0019, lines 5) for determining multiple dynamically variable sized carrier groups for the plurality of carriers and for determining at least one carriergroup parameter for each of the multiple carrier groups (channel analyzing circuitry CHANNEL receives a predetermined sequence from the TX modem and measures the signal to noise ratio for each carrier, paragraph 0019, lines 4-7; paragraph 0021 states that the carrier subsets of carriers typically will not contain the same number of carriers and the constitution of the subsets will be report via messages (possibly via the constellation information message BiGi) from the VDSL receiver to the VDSL transmitter; this paragraph indicates that the number of carriers in a carrier subset is not fixed and will varies according to the measured signal to noise ratio by CHANNEL as mentioned in paragraph 0019; paragraph 0023 states "the transmitting and computing bits and gains information according to the present invention may be applied during operation to adapt the carrier constellation according to changes of the channel characteristics"; the carrier constellation as mentioned in paragraph 0005, "this message also may contain the description of the carrier subsets". This indicates that the generation of the constellation information (including the description of the carrier subsets, the number of bits to be load in each carrier subset and the gain for each of the carrier subset) can be preformed during the operation to adapt to the changes of the

channel characteristics, that will include the measure of the signal to noise ratio for each carrier in order to group the carriers into difference carrier subsets. Since it is well known that the channel characteristic is dynamically changing, therefore, the update of the constellation information will be perform according to the change of the channel characteristic, that is the dynamically updating of the constellation information. From this two paragraphs (paragraph 0021 and 0023), it is inherent that he grouping of the carriers and transmitting parameters to other modems are perform dynamically and the size of each carrier subset will varies depending on the signal to noise ratio of each carrier);

carriergroup transmitting means (BiGi TX of Rx modem in figure 1) for transmitting messages (constellation information) comprising the at least one carriergroup parameter to the far-end modem (TX modem in figure 1) via the transmission channel (LINE in figure 1), to enable the far-end modem to send and receive messages using the multiple carrier groups (the constellation information receiver BiGi_RX decapsulates the constellation information message and supplies the parameter values B1, G1, B2, G2, . . . , B8, G8 to the constellation determining circuitry BiGi_DET; for each subset, SUBSET1, SUBSET2, . . . , SUBSET8, the constellation determining circuitry BiGi_DET obtain for each carrier the number of bits that should be modulated thereon. Similarly, the constellation determining circuitry BiGi_DET constantly interpolates for each subset, SUBSET1, SUBSET2, . . . , SUBSET8, the received gain value, G1, G2, . . . , G8 respectively, to obtain for each carrier the gain with which the carrier should be transmitted. The so generated bits and gains

information is supplied to the control input of the DMT modulator MOD, paragraph 0019; the MOD is being setup for modulates B1 bits (B1 is supposed to be 2 in Fig.) on the carriers f.sub.0 . . . f.sub.511 of SUBSET1 and transmits these carriers with gain G1, modulates B2 bits (B2 is supposed to be 4 in Fig.) on the carriers f.sub.512 . . . f.sub.1023 of SUBSET2 and transmits these carriers with gain G2, . . . , modulates B8 bits (B8 is supposed to be 3 in Fig.) on the carriers f.sub.3584 . . . f.sub.4095 of SUBSET8 and transmits these carriers with gain G8 as shown in figure 1, paragraph 0019);

a tone decoder (DMOD) coupled to the transmission channel wherein the plurality of carriergroup parameters is used to dynamically set up the tone decoder and wherein the plurality of carriergroup parameters comprises a carriergroup gain parameter (in the VDSL receiver RX, the DMT demodulator DMOD demodulates the correct amount of bits from the carriers F_0-F_{4095} since the demodulator DMOD is made aware of the bits and gains information directly by the constellation information transmitting arrangement BiGi_TX, this information is supplied to the control terminal of the DMT demodulator DMOD, paragraph 0019, it is discuss in above that the constellation information is adaptive to the change of the channel characteristic (paragraph 0023), therefore, the DMOD is being dynamically setup by the constellation information; it is mentioned above the constellation information comprises the number of bits in each carrier subset and the gain for each carrier subset).

(5) Regarding claims 2, 9, and 21:

Peeters discloses all the subject matter except explicitly disclose wherein the at least one carriergroup parameter transmitted by the carriergroup transmitting means is a carriergroup SNR parameter for the plurality of carriergroup.

However, Peeters et al. discloses wherein the at least one carriergroup parameter transmitted by the carriergroup transmitting means is a bit loading number for the carriergroup for the plurality of carriergroup (paragraph 0020, lines 3-8) and the bit loading information is obtained by the signal to noise ratio of the corresponding carrier, paragraph 0019.

It would have been obvious to one of ordinary skill in the art at the time of invention to realize that the bit loading for a carrier is proportional to the signal-to-noise ratio; with a high SNR, the carrier can transmit more bits; therefore the bit loading information for a carriergroup is another from of representation of the signal-to noise ratio. In the instant application, the far end modem receives the transmitted SNR parameter and uses the SNR for determining the bit loading information for the carrier group. Peeters et al. discloses that the near end modem used the measured SNR to determine the bit loading information and then transmitted the bit loading information to the far end modem. Therefore, it would have a matter if obvious design choice to one of ordinary skill in the art.

(6) Regarding claim 3, 10, 22:

Peeters further discloses that a bit number at which the carrier with the lowest index in the subset should be transmitted (paragraph 0020, lines 6-7) (the examiner interpret that the lowest index in the subset means the carrier with the lowest bit loading

number, it is means the carrier with the lowest signal-to-noises ratio, which is the worst case SNR).

(7) Regarding claim 4 and 23:

Peeters discloses wherein the carriergroup parameter is a carriergroup bitloading parameter (the set of parameter value for a carrier subset may consist of a bit number, carrier belonging to the same subset will be modulated with an equal amount of bits, paragraph 0008).

(8) Regarding claim 11:

Peeters et al. discloses wherein the step of determining a carriergroup parameter for the carriergroup comprises determining at least one carriergroup bitloading for the at least one carriergroup (the constellation information message that indicates bit and gain assignment to the upstream carriers is thus also kept short, paragraph 0022, lines 4-6).

(9) Regarding claims 7 and 14 and 26:

Peeters discloses means (constellation determining circuitry BiGi_DET) for using at least one message to the transmission channel comprising the at least one carriergroup parameter and the at lest one carrier group to set up a tone encoder (MOD) in a far-end modem (TX modem) coupled to the transmission channel (the constellation information receiver BiGi_RX decapsulates the constellation information message and supplies the parameter values B1, G1, B2, G2, . . . , B8, G8 to the constellation determining circuitry BiGi_DET; for each subset, SUBSET1, SUBSET2, . . . , SUBSET8, the constellation determining circuitry BiGi_DET obtain for each carrier the number of bits that should be modulated thereon. Similarly, the constellation

determining circuitry BiGi_DET constantly interpolates for each subset, SUBSET1, SUBSET2, . . . , SUBSET8, the received gain value, G1, G2, . . . , G8 respectively, to obtain for each carrier the gain with which the carrier should be transmitted. The so generated bits and gains information is supplied to the control input of the DMT modulator MOD, paragraph 0019).

(10) Regarding claim 16:

Peeters further discloses that a bit number at which the carrier with the lowest index in the subset should be transmitted (paragraph 0020, lines 6-7) (the examiner interpret that the lowest index in the subset means the carrier with the lowest bit loading number, it is means the carrier with the lowest signal-to-noises ratio, which is the worst case SNR).

(11) Regarding claim 19:

Peeters et al. discloses a method wherein the communication system is VDSL system (paragraph 0019, lines 1-2).

(12) Regarding claim 27:

Peeters discloses wherein the carriergroup bitloading and the carriergroup gain for the at least one carrier group is used to set up a tone encoder in a far end modem (in the VDSL receiver RX, the DMT demodulator DMOD demodulates the correct amount of bits from the carriers F_0-F_{4095} since the demodulator DMOD is made aware of the bits and gains information directly by the constellation information transmitting arrangement BiGi_TX, this information is supplied to the control terminal of the DMT demodulator DMOD, paragraph 0019, it is discuss in above that the constellation

information is adaptive to the change of the channel characteristic (paragraph 0023), therefore, the DMOD is being dynamically setup by the constellation information).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grube et al. (US 5,539,777) discloses a method and apparatus for a DMT receiver having a data de-formatter coupled directly to a constellation decoder. Sadri et al. (US 2005/0032514 A1) discloses an apparatus and associated methods to perform intelligent transmit power control with subcarrier puncturing. Mattsev et al. (US 7,286,609 B2) discloses an adaptive multicarrier wireless communication system, apparatus and associated methods. Peeters (US 7,269,209 B2) disclose discrete multitone transmission and reception. Kao et al. (US 6,295,515 B1) discloses dual mode bit and gain loading circuit ad process. Wu et al. (US 6,134,273) discloses bit loading and rate adaptation on DMT DSL data transmission. Osaksson et al. (US 6,366,554 B1) discloses a multi-carrier transmission system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIU M. LEE whose telephone number is (571)270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Siu M Lee/
Examiner, Art Unit 2611
6/9/2009

/Chieh M Fan/
Supervisory Patent Examiner, Art Unit 2611